ATOMIC ENERGY newsletter®

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
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Dear Sir:

European nuclear sales office has been set up in Brussels, Belgium, by The Babcock & Wilcox Co., New York. B&W joins the growing number of U.S. manufacturers of nuclear equipment who have established European offices or affiliations with firms in allied fields to sell to the forthcoming Euratom nuclear market. Ralph W. Deuster will be B&W's European nuclear sales representative, at 343 Ave. Louise, Brussels..... Nuclear research reactors will be supplied University of California (Los Angeles campus), and University of Washington, Seattle, by AMF Atomics division of American Machine & Foundry. With these orders, the company now has some 20 reactor projects underway at its works. (Other BUSINESS NEWS, p.2 this LETTER.)

Nuclear and electronic instrument plant at Mayfield, Pa., formerly run by El-Tronics, Inc., has been taken over by Piasecki Aircraft Corp., Phila., and is being operated as the Mayfield Electronics division of Piasecki. El-Tronics which recently petitioned for financial reorganization under Chapter 10 of the Bankruptcy Act, had some $2 million in Government contract work at Mayfield and this has been assumed by Piasecki. Products El-Tronics had been making at Mayfield include Geiger counters, radiation control panels, ionization chambers, and other nucleonic and electronic instrumentation. Previous to this new operation, Piasecki had been doing aircraft work only: development of an "aerial jeep" for the Army, a robot helicopter for the Navy, etc. (Other FINANCIAL NEWS, p.5 this LETTER.)

Research center to investigate problems which may arise in running the various U.K. nuclear power stations is to be set up by the U.K. Central Electricity Generating Board at its Berkeley nuclear power station in Gloucestershire. Chemistry, engineering, physics and metallurgy laboratories will make up the research installation. Construction costs will be about £1 million, with ground breaking scheduled for this September. (Other RESEARCH PROJECTS, p.4 this LETTER.)

Permanent institute for the study of nuclear energy law and outer space law has been established at Georgetown University Law Center, Washington, D.C. Local, national, and international legal problems arising out of commercial and military uses of nuclear energy and the exploration of outer space are to be the particular concern of the institute, which is headed by Prof. Leo A. Huard, as director. (The Law Center is now offering for the third consecutive year a graduate seminar in Atomic Energy and the Law; additional courses are in the planning stage in both nuclear energy law and space law. Further information may be obtained from Prof. Huard, at the Nuclear-Space Law Institute.)

Symposium on the industrial uses of radioisotopes will be held May 11 and 12 at Georgia Institute of Technology, Atlanta. Georgia Tech, Lockheed Aircraft (whose nuclear center is at Marietta) and USAEC are sponsors. Specific industrial uses including radiography, tracing and gauging will be covered. Details may be obtained from Richard Weigand, Dir., Short Courses & Conferences, Georgia Tech, Atlanta 13, Ga. (Other MEETINGS, COURSES, CONFERENCES, p.5 this LETTER.)

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ATOMIC ENERGY BUSINESS NEWS...

ACQUISITIONS MADE BY COMPANIES HANDLING NUCLEAR WORK:- Lockheed Aircraft Corp., Burbank, Calif., aircraft and missile maker, holding substantial nuclear research and development contracts, has bought controlling interest in Puget Sound Bridge & Dredging Co., Seattle, Wash. Annual gross sales of Puget Sound are estimated by industry sources at about $25 million, making it about the third largest on the West Coast. It can build vessels up to 4,000 tons. Discussing the acquisition, Robert E. Gross, Lockheed president, said that ..."with our planned investment in new additional facilities we believe we may become eligible for a part in building atomic submarines, which apparently are destined to become the capital ships of the future." Puget Sound will retain its corporate entity and function as a Lockheed subsidiary.

North American Aviation, Inc., aircraft builder handling nuclear work through its subsidiary Atomics International, will acquire Foster Wheeler Corp., heavy equipment manufacturer, through an exchange of stock on a share-for-share basis. Net assets of Foster Wheeler on Dec. 31, 1958 were $32,537,000; North American's assets on Sept. 30, 1958 were $184,417,000. Foster Wheeler has been supplying major nuclear power plant equipment, and its British subsidiary has joined with Rolls-Royce, Ltd., and Vickers, Ltd., to form Rolls Royce Associates which is working under British Admiralty contract on the nuclear submarine power plant for Britain's Dreadnought, her first nuclear undersea craft.

NEW GROUP SET UP AT HANFORD:- New group, managed by J.S. McMahon, called NPR Project Operation, has been set up by General Electric Co., at its Hanford atomic products operation. The new organization will have responsibility for the New Production Reactor (NPR). GE said the new reactor will involve concepts "significantly different" from those embodied in current Hanford reactors, and to handle the project successfuly will require close integration of intensive efforts in the areas of fuel development and fabrication; equipment development; process design; and field erection. (USAEC has agreed to build convertible power features into new $145 million plutonium reactor at Hanford, despite original adverse Stone & Webster engineering report. The Commission has decided to proceed with this dual purpose plutonium-power reactor authorized by last session of Congress, and for which $45 million were appropriated, Chairman McCone of the USAEC recently told hearing of Joint Congressional Committee on Atomic Energy. New USAEC budget includes an additional $75 million for this project.)

NEW URANIUM ORE ESTIMATES MADE:- Total of 82,500,000 tons (measured, indicated and inferred) of uranium ore averaging 0.27% uranium oxide are available in the U.S. according to latest estimates of U.S. Geological Survey. This is material which is metallurgically amenable to treatment, and is distributed among the states in this manner: New Mexico, 54,900,000 tons; Wyoming, 11,500,000 tons; Utah, 5,600,000 tons; Colorado, 4,400,000 tons; Arizona, 1,400,000 tons; Washington, Oregon, Nevada, 2,300,000 tons; North & S. Dakota, 600,000 tons; Texas, Calif., Montana, Idaho, Alaska, 1,800,000 tons. Richest ore is Utah's averaging 0.35% with other areas ranging down to 0.23%.

FAST TAX WRITE-OFFS AVAILABLE FOR URANIUM ORE PROCESSING FACILITIES:- New regulation of Office of Civil and Defense Mobilization (I-B) makes primary processing facilities for uranium ore and concentrates eligible for certificates of necessity for accelerated amortization. To be eligible, plants must qualify under USAEC program designed to encourage building processing plants close to new sources of uranium ore.

URANIUM PROCESSING PLANT ON-STREAM:- Reactor grade uranium tetrafluoride and vacuum recast metal are now being produced from ore concentrates in new plant of Atomic Fuel Corp., Tokyo, Japan. Innovations include use of Higgins-type, moving-bed, ion-exchange columns, and electrolytic uranium reduction cells; Excer process produces the tetrafluoride. Weinrich & Associates, Washington, D.C., designed plant.

FIRST U.S. NUCLEAR POWERED MERCHANT SHIP TO BE LAUNCHED:- Nuclear ship Savannah is scheduled for launching July 21, 1959 at the New York Shipbuilding Corp., Camden, N.J. Work started on her in May, 1958. Her outfitting will be continued, following the launching, including installation of nuclear propulsion equipment, etc., and she is expected to be ready for initial trials and tests early in 1960. About six months to a year will be spent on the initial trials, leading to eventual commercial operation on passenger-cargo service. The reactor for the propulsion plant is of the pressurized water type, and is being built under a USAEC contract by Babcock & Wilcox Co., Lynchburg, Va.

NEW PRODUCTS, PROCESSES, INSTRUMENTS...for nuclear lab & plant...

NEW PRODUCTS FROM MANUFACTURERS:- Standard neutron detection foils, for measuring neutron fluxes and for monitoring possible excursions in nuclear reactors, measure the spectrum in six energy increments: (1) thermal fluxes are measured with gold or cobalt foils; (2) neutron energies greater than 1 kev are measured by plutonium-239 foils; (3) neutron energies greater than 1.5 Mev by uranium-238 foils; (4) neutron energies greater than 2.9 Mev by sulfur-32 foils; (5) (6) neutron energies above 5.3, and energies greater than 8.6 Mev, are measured by analyzing the reaction products on aluminum-27 foils. A boron-10 shield protects the fission foils from thermal neutrons during irradiation. --Aerojet-General Nucleonics, P.O. Box 77, San Ramon, Calif.

New and extensive line of boron trifluoride neutron detectors ranges in size from 42-inches long, small-diameter probes to commonly-joined multiple tube units. The detectors come in several cathode materials: copper, brass and stainless steel. --Nuclear-Chicago Corp., 223 W. Erie St., Chicago 10, Ill.

New model 34-9 400 Channel Analyzer uses ferrite core memory system for spectrum analysis. Linearity of better than 0.5% and average dead-time of 120 microseconds is said to be achieved. Normal capacity per channel is 65,545 counts. Manufacturer notes that the use of Burroughs beam switching tubes has greatly simplified the circuitry of the analyzer. --Radiation Instrument Development Laboratory, Inc., 5737 So. Halstead St., Chicago 21, Ill.

PRODUCT NEWS:- Davison Chemical, offering from its new Erwin, Tenn., plant a complete line of thorium products and cold-enriched scrap recovery service, has now issued a price list for nuclear reactor feed material. Offered for outright sale are natural uranium metal at $24/lb.; depleted uranium metal at $4.85/lb.; and depleted uranium oxide at $3.30/lb. Davison also listed conversion charges on 1.6% enriched uranium metal, which are $5.60/lb.; 1.6% enriched uranium oxide, which are $6.75/lb.; 25% enriched metal, at $65.00/lb.; and highly enriched oxide, at $100.00/lb.

Small radioactive sources affixed to the sides of a vehicle or group of vehicles, in varying patterns, form the basis for a new checking system allowing rapid identification of railroad cars, trucks and other vehicles in freightyards, depots and similar traffic areas. The system uses products of U.S. Radium Corp., Morristown, N.J., and was jointly developed by U.S. Radium and Electronic Associates, Ltd., Willowdale, Ontario, Canada. Using sensors to "read" the patterns, it is claimed that railroad cars traveling at speeds up to 100 miles per hour can be identified.

Routine separation and concentration of large quantities of radioisotopes from reactor fuel wastes has started at the $2,200,000 fission products pilot plant of the USAEC at Oak Ridge National Laboratory, Tenn. Experimental operations began last August; since then minor alterations have been made. Feed for the plant comes from several Commission installations which chemically process used reactor fuels for recovery of uranium and plutonium. Separation operations of the plant currently are directed toward large-scale concentration of cerium-144 for use in the USAEC's Systems for Nuclear Auxiliary Power (SNAP). Objectives of SNAP are development of sources of auxiliary electric power for space missiles by using the heat of radioactive decay with thermocouples. Cerium-144, with its half life of 285 days, appears attractive for such purposes. (Other fission products to be available from the plant are cesium-137; promethium-147; strontium and technetium-99. With cerium-144, these five will be the main ones processed.) (Contract for design of plant to recover cesium-137 from similar waste materials, as feedstock, has been awarded by the U.K. Atomic Energy Authority to W.J. Fraser & Co., Ltd., Romford, chemical engineering firm.)

Increasing amounts of isotopes are being imported into W. Germany, where none are at present produced, according to the country's Ministry for Atomic Energy and Water Supply. For the first half of last year isotopes to the extent of 4,559 curies were imported, as against 4,444 curies for all of 1957. Largest exporter to W. Germany was the U.K., followed by the U.S., Canada, and Holland. In value, the imports were about $128,000 in 1956; about $159,000 in 1957; and about $117,000 in the first half of 1958. There were 663 users in the first half of last year of which 250 were industrial users and 413 in medical applications.

MANUFACTURERS' LITERATURE:- Ultra-Aire Space Filter is described in bulletin 1505-5 of Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh 8, Pa.

ATOMIC ENERGY CONTRACT NEWS...

Cost-plus contract in the amount of $500,000 will be awarded by the USAEC to General Electric Co., to do research, development and design of a fast breeder nuclear reactor using a plutonium oxide-uranium oxide fuel cycle. Award is being made on basis of GE's proposal, which was the most acceptable to the Commission of eight received, in response to the USAEC's October, 1958, invitation. Objectives of the project are to lower the cost of electric energy at fast breeder nuclear reactor power stations, primarily by reducing fuel cycle costs.

Some 105 non-secret physical research contracts have been awarded by the USAEC to colleges, universities and private research institutions. Thirty-three, amounting to $760,894 were new contracts; seventy-two, valued at $2,562,691 were renewals. Among the renewals were studies by Bausch & Lomb Optical Co., of irradiation damage to glass, and by General Atomic division of General Dynamics Corp., on the high-temperature chemistry of fission-product elements.

Five year contract has been signed by National Aeronautics & Space Administration with Linde Co., division of Union Carbide Corp., for west coast purchases of liquid hydrogen as one of the high-energy fuels for several of its rocket projects. Included was the USAEC's nuclear-powered rocket development, Project Rover.

EXPERIMENTAL WORK...at atomic energy installations...

Plasma thermocouple, developed at Los Alamos Scientific Laboratory, N.M., by a group under George M. Grover, physicist, was demonstrated recently by the group as an example of energy produced by the thermoelectric effect. Heat source was a nuclear reactor; one metal used was uranium, the other cesium metal in a plasma state. Work was an offshoot of the laboratory's Rover project, which is concerned with producing nuclear propulsion of rockets.

Low power nuclear reactor designed specifically for testing the fuel arrangement in large power reactors is to be built at the Chalk River nuclear research center of Atomic Energy of Canada, Ltd. Known as ZED-2, it will be built by Foster Wheeler, Ltd., St. Catherines, Ontario who will also construct its building. The machine, together with the research building, will cost about $3,000,000.

ATOMIC ENERGY PATENT DIGEST...

ISSUED March 31, 1959 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS:- (1) Process of preparing massive zirconium particles. Stuart Schott, Virgil L. Hansley, inventors. No. 2,880,084 assigned to National Distillers & Chemical Corp. (2) Neutron detector. Louis Musicant, inventor. No. 2,880,326 assigned to National Radiac, Inc., Newark, N.J. (3) Wall exposure safety circuit for radiation protection. John A. Reynolds, Edward Slagle, inventors. No. 2,880,327 assigned to Picker X-Ray Corp., Waite Manufacturing Div., Inc., Cleveland, Ohio. (4) Particle accelerator. Robert Warnecke, Georges Mourier, inventors. No. 2,880,353 assigned to Campagnie Generale de Telegraphie Sans Fil. (France).

ISSUED March 31, 1959 to GOVERNMENT ORGANIZATIONS:- (1) Production of uranium-calcium fluoride. Willis B. Tolley, inventor. No. 2,880,059 assigned to USAEC. (2) Annular impactor sampling device. George W.C. Tait, inventor. No. 2,879,664 assigned to USAEC. (3) Control for nuclear reactor. Harold V. Lichtenberger, Reid A. Cameron, inventor. No. 2,880,155 assigned to USAEC. (4) Structure for sub-assemblies of electronic equipment. Persa R. Bell, Cecil C. Harris, inventors. No. 2,880,262 assigned to USAEC. (5) Peak limiting amplifier. William W. Goldsworthy, James B. Robison, inventors. No. 2,880,318 assigned to USAEC.

ISSUED April 7, 1959 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS:- (1) Radiation detector. Serge A. Scherbatskoy, inventor. No. 2,881,324 issued to inventor of record. (2) Device for charting x-ray spectra. Charles F. Hendee, Samuel Fine, Walter Brown, inventors. No. 2,881,325 assigned to North American Phillips Co., Inc. New York, N.Y. (3) Method and apparatus for detecting radiation. Charles F. Hendee, Samuel Fine, inventors. No. 2,881,328 assigned to North American Phillips Co., Inc., New York, N.Y.

ISSUED April 7, 1959 to GOVERNMENT ORGANIZATIONS:- (1) Process of coating with nickel by the decomposition of nickel carbonyl. Thomas B. Hoover, inventor. No. 2,881,094 assigned to USAEC. (2) Cutting and wedging jacket remover. Melvin Freedman, Severin Raynor, inventors. No. 2,880,636 assigned to USAEC.

ATOMIC ENERGY FINANCIAL NEWS...

NEW HIGH IN SALES & EARNINGS BY NUCLEAR PRODUCTS FIRM:- Earnings of $261,853, shown by Nuclear-Chicago Corp., for the six months period ended Feb. 28, 1959, were a new high for the firm whose like period last year showed earnings of $181,469. The improved earnings were equal to 40¢ a share on the 657,124 shares outstanding, as against 28¢ for the earlier period. Business in the last six months has shown a 50% gain over last year's like period, according to J. M. Phelan, president and board chairman.

INVESTMENT COMPANY HAS PROFITABLE RETURN FROM URANIUM HOLDINGS:- Atlas Corp., closed-end investment company, is operating its uranium properties profitably and higher production and sales are expected for 1959. According to its annual report, released last week, its uranium subsidiaries (40% of Atlas' total assets) are operating at a 50,000 ton per month rate; the ore output may reach 70,000 tons per month by the end of this year. Hearings before the Securities and Exchange Commission on the proposed merger of its five uranium companies into Hidden Splendor Mining Co., will probably be conluded this Spring, the report stated. A favorable ruling in a lawsuit in the Federal District Court in New Mexico will enable one of its subsidiaries, Rio de Oro Uranium Mines, Inc., to ship some 600,000 tons more of ore in 1959 and 1960 than had been expected. Atlas said this would give the merged companies an additional cash flow of about $4 million this year. Atlas had year end net asset value equivalent to $8.16 a share on the 9,495,264 common shares outstanding before distribution of a common stock dividend it declared; this compared with an asset value of $8.05 a share on 9,488,739 shares outstanding at the end of 1957.

FUNDS HALVED FOR ITALIAN NUCLEAR PROJECTS:- Allocation of funds by the Italian Government to the National Committee for Nuclear Research has been reduced to $8.4 million for the current year, although the Government had agreed last year to almost double this for the year. Since many of the commitments of the National Committee (which handles almost all Italy's nuclear research and development projects) will mature in the next few months, some revision of plans may be necessary. (The Committee's C.P.5 research reactor installed by American Car & Foundry at Ispra, on Lake Maggiore, west of Milan started operating in last fortnight. It recently awarded contracts for construction of a nuclear center at Casaccia, near Rome, which will be equipped with a General Atomic TRIGA Mark II 100 kw research reactor; this is expected to be in operation by the end of the Summer.)

STOCKHOLDING CHANGES SHOWN:- Recent changes in stockholdings of officers or large holders of shares in firms with nuclear interests include sale of 53,400 shares of Nuclear Corp. of America by Charles W. Engelhard, reducing his holdings to 37,000 shares. Sam Norris, president, bought 50,000 shares for which he had options, increasings his holdings to 51,000 shares. (Nuclear Corp. of America is wholly-controlled by Engelhard Industries.).....John R. Dunning, director, sold 10,000 shares of Stanrock Uranium Mines, Ltd., reducing his holdings to 21,000 shares..... Raymond F. Shima, director, bought 10,400 shares of Victoreen Instrument Co., increasing his holdings to 21,981 shares.

MEETINGS, COURSES, CONFERENCES...

CONFERENCES:- European Conference for industrial management on Industrial Prospects in Nuclear Energy is scheduled for Stresa, Italy, May 11-14, 1959. It will be under the auspices of the European Nuclear Energy Agency of the O.E.E.C. from whom full information may be obtained at 38 Blvd. Suchet, Paris 16, France.

SYMPOSIUM:- Technical methods of health protection at atomic energy installations will be covered at symposium for health physicists to be held May 25-28, 1959 at Riso, near Copenhagen, Denmark. The O.E.E.C.'s European Nuclear Energy Agency, and the Danish Atomic Energy Commission are sponsoring the symposium. Further information may be obtained from the O.E.E.C. at 38 Blvd. Suchet, Paris 16.

Pan-American Union and the Government of Argentina will sponsor an inter-American symposium on Radiation and Radioisotopes in the Life Sciences June 1-5, in Buenos Aires.

Sincerely,

The Staff,
ATOMIC ENERGY NEWSLETTER

April 14, 1959